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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/623,006	08/24/2000	Patrick Tso	10738-17	5310

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EXAMINER	
MITRA, RITA	
ART UNIT	**PAPER NUMBER**
1653	

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/623,006	TSO ET AL.	
	Examiner	Art Unit	
	Rita Mitra	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 July 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-14 and 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-14 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Status of the Claims

Applicants' amendment and response to office action dated April 9, 2003, (in paper #18) filed on July 15, 2003 is acknowledged. Claims 1, 4, 11, 12 and 19 have been amended. Claims 2, 3, 15-18 and 20-62 have been cancelled. Therefore, claims 1 and 4-14, 19 are currently pending and are under examination.

Response to Remarks and Arguments

Withdrawal of Objection/Rejections

The objection to specification is withdrawn in view of Applicants' amendment to the specification by inserting continuing data at page 1 of the specification..

The rejection of claims 1, 4, 7, 11-14 rejected under **35 U.S.C. § 112, second paragraph** is withdrawn in view of Applicants' amendment to claims 1, 4, 12 and remarks on page 11-12.

The rejection of claims 1, 4-14 and 19 under **35 U.S.C. § 102(a)** as being anticipated by Qin et al. is withdrawn in view of Applicants' remarks on pages 12-13.

The rejection of claims 1, 4-12 and 19 under **35 U.S.C. § 102(b)** as being anticipated by Boguski et al. is withdrawn in view of Applicants' amendment to claim 1 and remarks on pages 13-14.

Rejections under 35 U.S.C. § 112, First Paragraph

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 4-14 stand/are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a method for inhibiting lipid oxidation associated with a condition in a patient comprising administering an apolipoprotein A-IV compound does not reasonably provide enablement for a method for inhibiting lipid oxidation comprising administering all apolipoprotein A-IV variants. The specification does not enable persons skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Claims 1 and 4-14 encompass a method for inhibiting lipid oxidation associated with a condition in a patient comprising administering a composition comprising apolipoprotein A-IV compound, wherein the compound is a peptide sequence (claims 1, 4-14), a derivative, analog, homolog, fragment of apolipoprotein A-IV (claim 4).

Applicants traverse the rejection with respect to present (amended) claims. Applicants assert that the apolipoprotein A-IV compound is a peptide sequence of from 6-71 amino acids in length and has substantially the same lipid oxidation properties as the apolipoprotein A-IV compound. This is not persuasive because amended claims do not overcome the rejection. Moreover, specification, only discloses cursory conclusions (see page 6, lines 3-6), without data to support the findings, which state that a number of novel lipid oxidation suppressant peptides, derived from apolipoprotein A-IV, have been made, these peptides possess lipid oxidation inhibiting properties which when administered orally or intravenously, can be used to decrease atherosclerosis. There are no indicia that the present application enables the full scope in view of treating conditions associated with lipid oxidation comprising administering an apolipoprotein A-IV variant as discussed in the following stated rejection. The present application provides no indicia and no teaching/guidance as to how the full scope of the claims is enabled.

In this regard, the application disclosure and claims have been compared per the factors indicated in the decision *In re Wands*, 8 USPQ2d 1400 (Fed. Cir., 1988) as to undue experimentation. The factors include: 1) the nature of the invention; 2) the breadth of the claims 3) the amount of direction or guidance presented; 4) the presence or absence of working examples; 5) the quantity of experimentation necessary; 5); 6) the predictability or unpredictability of the art; 7) the state of the prior art; and, 8) the relative skill of those skilled in the art;

Each factor is addressed below on the basis of comparison of the disclosure, the claims and the state of the prior art in the assessment of undue experimentation.

The nature of the invention:

The scope of the claims includes method of lipid oxidation associated with a condition in a patient comprising administering an apolipoprotein A-IV compound, wherein the compound is a peptide sequence, and a derivative, analog, homolog, fragment of apolipoprotein A-IV, but the specification does not show the treatment using these variants. Thus, the disclosure is not enabling for the reasons discussed below.

The breadth of the claims:

The breadth of the claims is broad and encompasses an unspecified number of variants regarding the apolipoprotein A-IV protein products as biological active derivatives, analogs, homologs and fragments, which are not specifically described or demonstrated in the specification. The specification indicates at page 6, lines 3-6 that a number of novel lipid oxidation suppressant peptides, derived from apolipoprotein A-IV, have been made, that possess lipid oxidation inhibiting properties which when administered orally or intravenously, can be used to decrease atherosclerosis. These peptides are not adequately described or demonstrated in the specification.

Applicants urge at page 8, that variants of apolipoprotein A-IV, which include derivatives, analogs, homologs and fragments, are fully enabled by the specification. In support of this statement Applicants have cited various page numbers of the specification where the definitions of derivatives, analogs, homologs and fragments have been given. It should be noted that all those definitions were considered while the application was examined for its merit (see office action dated April 9, 2003). Claim 4 requires a functional derivative, analog, homolog and or fragment of a peptide sequence of apolipoprotein A-IV compound, therefore at least includes the amino acid sequence that has lipid oxidation inhibition activity. However, the disclosure fails to provide a description of a variant that demonstrates such activity. Therefore, as the specification fails to describe adequately the structure and function of those apolipoprotein

variants, one skilled in the art would not recognize a specific utility for the variants and would not know how to use them. Thus, for the reasons set forth above, undue experimentation is required to make and use the claimed apolipoprotein variants. Although the specification outlines art-recognized procedures for producing analogs, homologs, derivatives and fragments (pages 14, 15, 21-23), this is not adequate guidance as to the nature of functional derivatives that may be constructed. Thus, further experimentation is required to make and use the claimed invention.

The amount of direction or guidance presented;
The presence or absence of working examples; and
The quantity of experimentation necessary:

The claims are directed to a method of lipid oxidation associated with a condition in a patient comprising administering an apolipoprotein A-IV compound, wherein the compound is a peptide sequence, and a derivative, analog, homolog, fragment of apolipoprotein A-IV. However, the specification only indicates apolipoprotein A-IV protein effective in protection against lipid oxidation (Examples, page 39-43, Fig 1-4), there is no disclosure or description of the use of other apo A-IV protein fragments, derivatives, homologs or analogs. There are no working examples indicating the claimed methods in association with the variants. Moreover, the specification has not shown the treating conditions using these apo A-IV variants. There are no working examples of these methods in the specification. Furthermore, the specification does not provide any specific guidance on treating conditions such as the patient population, dosage, regimen, routes of administration, the time and the treatment schedule as well as the effect of the apo A-IV variants, nor indicated the expected outcome of treatment. Since the specification fails to provide sufficient guidance on the treating conditions for various apo A-IV variants, it is necessary to have additional guidance on the identities of apo A-IV variants and to carry out further experimentation to assess the effect of an apo A-IV variant, which is used for the treatment. Without more guidance from the specification it would require undue and excessive experimentation for a person having skill in the art to be able to make and use the claimed variants.

The state of the prior art:

The relative skill of those skilled in the art:

The prior art has shown that apolipoprotein A-IV protein, is effective as endogenous inhibitor of lipid oxidation (see Boguski et al. 1984), however, the general knowledge and level of the skill in the art do not supplement the omitted description, the specification needs to provide specific guidance on the treating conditions such as the dosage, the time and the effect for treating conditions associated with lipid oxidation for various apo A-IV protein products to be considered enabling for variants.

In summary, the scope of the claim is broad, while the working example does not demonstrate the claimed variants, the guidance/the teaching in the specification is limited, and the outcome is unpredictable using various apolipoprotein A-IV products, therefore, it is necessary to have additional guidance and to carry out further experimentation to assess the effect of the treatment using a apolipoprotein A-IV variants.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

No claims are allowed.

Inquiries

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Rita Mitra whose telephone number is (703) 605-1211. The Examiner can normally be reached from 9:30 a.m. to 6:30 p.m. on weekdays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Christopher Low, can be reached at (703) 308-2923. Papers related to this application may be submitted to Technology Center 1600 by facsimile transmission. Papers should be faxed to Technology Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Fax Center number is (703) 308-4242. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Rita Mitra, Ph.D.
November 28, 2003

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